

Table 1. PRE and POST Herbicide Diversification Options for Glyphosate-Resistant Corn

Authored by Jeff Gunsolus and adapted by Jeff Stachler



Herbicides to Complement Glyphosate						
SOA #	PRE as part of sequential with glyphosate	Common ragweed	Giant ragweed	Lambsquarters	Kochia	Waterhemp
5	Atrazine (0.38 lb ai/A)	G	F	G/E	G	G/E
27	Balance Flex <i>(ND only)</i>	G/E	F/G	E	E	G
4	Banvel / Clarity (dicamba)	G	F	G	G	G
27	Callisto	G/E	G	G/E	P	G/E
15,27	Camix	G	G	G/E	F	E
15	Harness / Surpass (acetochlor)	F	P	F/G	F	G/E
15	Other Acetamides (Dual, Lasso, Outlook)	P	P	P/F	N/P	G
2,4	Hornet	G/E	F/G	G	F	P/F
14,15	Integrity	G/E	G	G/E	G/E	G/E
5,15,27	Lumax	G/E	G	G/E	G/E	E
2,27	Prequel <i>(ND only)</i>	G/E	F/G	E	E	G
2,4,15	SureStart	G/E	F/G	E	F/G	G
POST as part of tank mix with glyphosate						
14	Aim	P	P	F/G	F/G	F/G
5	Atrazine (0.38 lb ai/A)	G/E	G	E	E	G
4	Banvel / Clarity (dicamba)	G/E	G	G	G/E	G
6	Buctril	G/E	F/G	G	G/E	F
14	Cadet	P	P	F	P/F	F
28	Callisto	F	G	G/E	P/F	E
2,27	Capreno	G	G	G/E	E	G/E
2,4	Hornet	G/E	G/E	P/F	F/G	P/F
27	Impact	G	G	G/E	E	G/E
27	Laudis	G	G	G/E	E	G/E
2	Option	P/G	P	F/G	P/G	P
2	Permit	P/G	P/G	P	P/G	P/G
2,4	Resolve Q	P	P	F	P/E	P/G
14	Resource	F	P	F	P	F
4,19	Status / Distinct	G/E	G/E	G/E	E	G
Alternative Technologies						
10	Ignite 280 in LL Corn	G/E	G/E	F	E	G

E = Excellent Control G = Good Control F = Fair Control P = Poor Control N = No Control

SOA = Site of action is defined as the biochemical site at which the herbicide binds to control a plant

Note: strengths and weakness and PRO's and CON's of PRE's such as crop injury potential under cool/wet conditions

Note: problems with timing, crop injury potential, and vol. crops of POST herbicides

Note: problems with timing, crop injury potential, and off-target injury of tank mixtures

Table 4. PRE and POST Herbicide Diversification Options for Glyphosate-Resistant Soybean

Authored by Jeff Gunsolus and adapted by Jeff Stachler

Herbicides to Complement Glyphosate						
SOA #	PRE as part of sequential with glyphosate	Common ragweed	Giant ragweed	Lambsquarters	Kochia	Waterhemp
15	Alachlor (IntRRo)	P	P	P/F	P	F
15	Other Acetamides (Dual, Outlook)	P	P	P/F	N/P	F/G
2,14	Authority Assist	F	P	E	E	G/E
2,14	Authority First / Sonic	G/E	G	G/E	G/E	G/E
5,14	Authority MTZ	G	P/F	G	G/E	G/E
5,15	Boundary	G	P/F	G	P	G/E
2,2,14	Enlite (<i>MN Only</i>)	G	F	G/E	G	G/E
2	FirstRate	G/E	G	G	F	P
2,14	Gangster	G/E	G	G/E	G	G
2,14	Optill	G	F/G	G/E	G	G
14,15	Prefix (<i>E. of I-29 and S. of I-94 Only</i>)	G	F	G	F	G
3	Prowl	P	P	G	P	F/G
5	Sencor	G	P	P/F	F/G	G
14	Sharpen (1 oz/A)	G	F	G/E	G	G
14	Spartan	P	P	E	E	G
3	Treflan	P	P	G/E	P	G/E
14	Valor	F/G	N/P	G/E	G	G
POST as part of tank mix with glyphosate						
14	Cadet	P	P	F	P/F	F
2	Classic (<i>MN Only</i>)	G	F/G	P	P	P
14	Cobra / Phoenix	G/E	G	P	P/F	G/E
2	FirstRate	E	E	P	P	P
14	Flexstar	G/E	G	P/F	G	G/E
2	Harmony GT	P/F	P	G/E	F/G	P/G
2	Pursuit	P	P	P/F	P/G	P/E
2	Raptor	P	P	F	P/E	P/E
14	Resource	F	P	F	P	F
2	Synchrony XP (<i>MN Only</i>)	G	F/G	G/E	P/E	P/G
14	Ultra Blazer	G	F	F	P/F	G
Alternative Technologies						
10	Ignite 280 in LL Soybean	G/E	G/E	F	E	G

E = Excellent Control G = Good Control F = Fair Control P = Poor Control N = No control

SOA = Site of action is defined as the biochemical site at which the herbicide binds to control a plant

Note: strengths and weakness and PRO's and CON's of PRE's such as crop injury potential under cool/wet conditions

Note: problems with timing, crop injury potential, and vol. crops of POST herbicides

Note: problems with timing, crop injury potential, and off-target injury of tank mixtures

Table 7. PRE and POST Herbicide Diversification Options for Glyphosate-Resistant Corn - Crop Rotation

Authored by Jeff Gunsolus and adapted by Jeff Stachler

Herbicides to Complement Glyphosate						
SOA #	PRE as part of sequential with glyphosate	Herbicide Crop Rotation Interval (Months)				
		Dry bean	Potato	Soybean	Sugarbeet	Wheat
5	Atrazine (0.38 lb ai/A)	NCS	NCS	12	NCS b	NCS
27	Balance Flex (ND Only)	18	6	6	18	6
4	Banvel / Clarity (dicamba)	4	4	4	4	0
27	Callisto	18	10	10	18	4
15, 27	Camix	18	NCS	NCS	18	NCS
15	Harness / Surpass (acetochlor)	NCS	NCS	NCS	NCS	4
15	Other Acetamides (Dual, Lasso, Outlook)	0	0	0	NCS	4 to 4.5
2,4	Hornet	10.5	18	10.5	26 b	4
14,15	Integrity	NCS	NCS	NCS	NCS	4
5,15,27	Lumax	18	18	NCS	18	NCS
2,27	Prequel (ND only)	18	6	10	18	4(Fall)/9(Sp)
2,4,15	SureStart	18	18	NCS	26 b	4
<u>POST as part of tank mix with glyphosate</u>						
14	Aim	0	0	0	0	0
5	Atrazine (0.38 lb ai/A)	NCS	NCS	12	NCS b	2CS
4	Banvel / Clarity (dicamba)	4	4	4	4	4
6	Buctril	1	1	1	1	1
14	Cadet	NCS	NCS	0	NCS	NCS
27	Callisto	18	10	10	18	4
2,27	Capreno	18 [see label]	18 [see label]	10	(24) [see label]	4
2,4	Hornet	10.5	18	10.5	26 b	4
27	Impact	18 / 9 [0.5oz/A]	9	9	9 [0.5 fl oz/A] / (18)	3
27	Laudis	9 to 18 [see label]	10	8	10 [20" rain] / (18)	4
2	Option	3	3	0.5	3	3
2	Permit	9	9	9	36	2
2,4	Resolve Q	10	0	10	10/18 [see label]	9
14	Resource	1	1	0	1	1
4,19	Status / Distinct	4	4	1 to 4	4	1 to 4
<u>Alternative Technologies</u>						
10	Ignite 280 in LL Corn	6	2.33	0	0	2.33

SOA = Site of action is defined as the biochemical site at which the herbicide binds to control a plant

NCS = Next Cropping Season

2CS = 2 Cropping Seasons

() = Recommended interval

Shading = Herbicides requiring ≥2 years before planting sugarbeets

b = including a successful bioassay

Table 8. PRE and POST Herbicide Diversification Options for Glyphosate-Resistant Soybean - Crop Rotation

Authored by Jeff Gunsolus and adapted by Jeff Stachler

Herbicides to Complement Glyphosate		Herbicide Crop Rotation Interval (Months)				
SOA #	PRE as part of sequential with glyphosate	Corn	Dry bean	Potato	Sugarbeet	Wheat
15	Alachlor (IntRRo)	0	NCS	NCS	NCS	NCS
15	Other Acetanalides (Dual, Outlook)	0	0	0	NCS	4 to 4.5
2,14	Authority Assist	10	4	26	40 b	4
2,14	Authority First / Sonic	10	12	18	30 b	4
5,14	Authority MTZ	10	12	12	36	4
5,15	Boundary	8	12	0	18	8
2,2,14	Enlite (<i>MN Only</i>)	9	9	30	30	4
2	FirstRate	9	9	18	30 b	3
2,14	Gangster	9	9	18	30 b	3
2,14	Optill	8.5	4	26	40 b	4
14,15	Prefix (<i>E. of I-29 and S. of I-94 Only</i>)	10	0	18	18	4.5
3	Prowl	0	0	0	12 (2CS)	NCS
5	Sencor	4	12	4	18	8
14	Sharpen (1 oz/A)	0	4	4	4	0
14	Spartan	10	0	12	36	4
3	Treflan	NCS	0	0	12 (2CS)	NCS
14	Valor	0.5 to 1	3 to 4	4 to 12	4 to 10	1 to 2
<u>POST as part of tank mix with glyphosate</u>						
14	Cadet	0	NCS	NCS	NCS	NCS
2	Classic (<i>MN Only</i>)	10	12	30	30	3
14	Cobra / Phoenix	0	0	0	0	0
2	FirstRate	9	9	18	30 b	3
14	Flexstar	10	10	18	18	4
2	Harmony GT	0	45 days	45 days	45 days	0
2	Pursuit	8.5	4	26	40 b	4
2	Raptor	8.5	0	9 to 18	18 to 26	3
14	Resource	0	1	1	1	1
2	Synchrony XP (<i>MN Only</i>)	9	9	30	30	3
14	Ultra Blazer	100 days	100 days	100 days	100 days	40 days
<u>Alternative Technologies</u>						
10	Ignite 280 in LL Soybean	0	6	2.33	0	2.33

SOA = Site of action is defined as the biochemical site at which the herbicide binds to control a plant

NCS = Next Cropping Season

2CS = 2 Cropping Seasons

() = Recommended interval

Shading = Herbicides requiring ≥ 2 years before planting sugarbeets

b = Including a successful bioassay